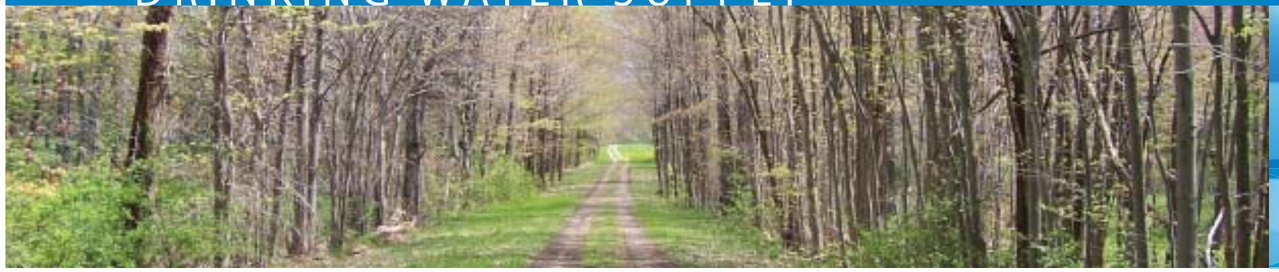
DRINKING WATER SUPPLY



AKRON WATER SUPPLY FACTS

- Manages nearly 20,000 acres of property, four raw water reservoirs, a medium-size water plant and an extensive water distribution system
- Treats approximately 35 million gallons a day (MGD) (132,489 m^3/d) of surface water delivered via three impounding reservoirs with a combined storage capacity of more than 10 billion gallons (3.78541e7m^3) at its treatment facility (rating capacity of 67 MGD, i.e., 253,623 m^3/d).
- Operates and maintains a 1,200-plus-mile (1931.213 km.) water distribution system serving approximately 300,000 people, along with multiple pump stations, finished water holding reservoirs, elevated tanks and standpipes

AKRON WATER SUPPLY/AKRON WATER RECLAMATION SERVICES KEY ADVANTAGES

A hub of technology, collaboration and innovation, Akron Water Supply and Akron Reclamation Services meet the needs of their residential and commercial customers while exploring the latest research and development in the areas of water supply processing, delivery and treatment.

Both foreign and domestic companies have partnered with Akron Water Supply and Akron Reclamation Services to develop, test and implement new technological initiatives and innovations, taking advantage of the ability to evaluate their products and technology in a working system with about a 300,000 population base.

Akron Water Supply's and Akron Reclamation Services' focus on energy independence and environmental stewardship have resulted in projects and best practices that have been adopted by other cities and markets, providing their R&D partners with new opportunities for growth and expansion.

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DRINKING WATER SUPPLY

Akron Water Supply is known as a progressive and dependable water system in the U.S., due to its ongoing investment in the continuous improvement of water operations, infrastructure and the environment.

The system produces about 12.7 billion gallons (4.80747e7 cubic meters, i.e., m^3/y) of fresh, clean water every year with the capacity to deliver another 11.6 billion gallons (4.39108e7 m^3/y), more than enough to serve its approximately 300,000 users and accommodate the requirements of additional residential and commercial customers.

Akron Water Supply water facilities include a technologically advanced network of pumps, pipes, equipment, treatment processes, computer-automated control systems and advanced data management, event response and water security tools.

Foreign and domestic companies interested in developing, testing and implementing new technological initiatives and innovations in the U.S. market will find Akron Water Supply an ideal partner. Its collaborative, results-oriented approach makes Akron Water Supply a viable destination for companies that:

- Are seeking an R&D partner with which to develop their technology
- Have a unique technology that will improve Akron's water and is marketable throughout the U.S.
- Desire to establish themselves in the U.S.
- Want to demonstrate the success of their technology in a practical application.

The following case studies illustrate just a few of the successful partnerships and collaborations initiated by the City of Akron and undertaken by Akron Water Supply.

DRINKING WATER SUPPLY

PARTNERSHIP WITH MEKOROT, ISRAEL'S NATIONAL WATER COMPANY

Goal: To jointly explore ways to commercialize Israeli water technology

For 70 years, Mekorot's National Water System has been meeting the needs of Israel's growing population, despite significant geographical, climatic and geopolitical challenges. The company also holds the reputation of being one of the world's most technologically advanced water companies, a world leader in desalination, water reclamation, water project engineering, water safety and water quality, thanks to its ongoing research, experimentation and field innovation.

Seeking opportunities for joint venture, technical and professional exchanges, exploration of water system security, commercialization of water technologies, and other related areas of mutual cooperation, Akron Mayor Don Plusquellic, accompanied by a professional delegation, traveled to Israel, where they met with Mekorot to explore the possibility of a mutually beneficial collaboration. Their subsequent agreement — the first Mekorot has established with a U.S. city — would allow the Israeli organization to introduce its water technologies program to the U.S. market while providing the City with access to the most efficient, cutting-edge Israeli technologies currently available.

WaTech (Water Technologies Entrepreneurship Center), created by Mekorot in 2004 to spearhead its initiatives, is intending to have office space in the Akron Global Business Accelerator to use as its initial U.S. business development location while working with the City on the two-stage R&D process.

The first stage focuses on both parties sharing information regarding water security strategies, current and developing technologies, and current administration of their respective water and energy systems. Mekorot and Akron will then collaborate on the promotion of economic and business development initiatives, working toward the commercialization of water and energy-related technologies to create economic growth, additional revenue streams, and new employment opportunities for both entities, as well as sharing the benefit of water innovation worldwide.

INNOVATIVE TECHNOLOGY APPLICATION AND COLLABORATION WITH THE UNIVERSITY OF AKRON

Goal: To demonstrate the effectiveness of a fluorescence-based approach to optimize water treatment plant and distribution system operations

One of the many challenges facing water treatment plants is being in compliance with the U.S. Environmental Protection Agency's (EPA) regulation of disinfection by-products (DBPs), which requires real-time information about DBP formation potential and dissolved organic carbon (DOC) removal at the water treatment plant.

While most water treatment plants in the United States rely on chlorine for disinfection, this has the secondary effect of reacting with DOC to form DBPs in the distribution system, necessitating a method to characterize the nature of DOC and its precursors to DBP formation.

Total organic carbon reduction at the water treatment plant is the primary approach to reducing DBP formation in water distribution systems. The specific impact of various coagulants and coagulation conditions (e.g., pH and dose) on DBP formation, however, is complicated. Natural organic matter (NOM) is a heterogeneous mixture of aliphatic and aromatic polymers. Optical measurements such as ultra-violet (UV) absorbance and fluorescence are used to trace the dynamics and characteristics of NOM.

Akron Water Supply participated in a three-year collaborative research project with The University of Akron to evaluate the effectiveness of fluorescence spectroscopy as a way to characterize the nature of DOC and predict DBP formation potential. The outcome showed that implementing fluorescence excitation-emission matrixes (EEMs) results in both chemical cost savings (20 percent to 30 percent) and EPA compliance, and, by extension, Akron Water Supply's ability and willingness to participate in research to prove a technology.

This research effort (i.e., collecting fluorescence and water quality measurements) in a full-scale setting constitutes one of the largest in the world examining fluorescence use in an engineered system and has established Akron Water Supply as a leader in innovative water treatment operations and disinfection by-product management strategies.